

# Author Index

The numbers in this index are paper numbers.

- Abadkon, A., 23  
Aboul-Ela, M.T., 40  
Afonso, S.M.B., 41  
Akiner, M.E., 23  
Armani, U., 43  
Avakian, J., 6, 49  
Awad, A.R., 40  
Aziz, K., 30
- Bajtek, Z., 47  
Bator, M., 9  
Bazán, F.A.V., 17  
Beck, A.T., 17, 42  
Berardi, L., 6  
Bezak, J., 47  
Blanco, N., 45  
Boucard, P.A., 50
- Campos, L.C.D., 22  
Çarbaş, S., 12  
Chamoret, D., 37  
Charalampakis, A.E., 36, 38, 48  
Charmpis, D.C., 2  
Chateauneuf, A., 3  
Chen, T.Y., 53  
Cheng, S-T., 33, 44  
Cholvadt, J., 31  
Christodoulou, S.E., 51  
Cisty, M., 24, 47  
Costa, J., 45  
Csébfalvi, A., 18, 21
- Danka, S., 19  
Davenport, J., 34  
de Araujo, R.R., 25  
de Moura, J.G., 10
- de Souza, S.R., 10  
Dimou, C.K., 36, 48  
Divac, D., 13  
Domaszewski, M., 37  
Dueñas-Osorio, L., 46
- Eliezer, O., 20  
Emadi, A., 27
- Fang, G., 30  
Fiore, A., 6  
Freitag, S., 28  
Fu, C., 16
- Garcia-Lopez, N.P., 3  
Giannico, A., 49  
Gomes, W.J.S., 17, 42  
Gómez, C., 46  
Goulart, E.S., 25  
Graf, W., 28  
Greiner, D., 8  
Grujović, N., 13
- Hajela, P., 8  
Hasançebi, O., 12  
Hofwing, M., 39  
Horowitz, B., 41  
Huang, J.H., 53
- Jahanmohammadi, A., 27  
Janouchová, E., 1  
Jia, G., 15  
Jiang, S.F., 16, 32
- Kaliske, M., 28  
Kapur, N., 43  
Kaveh, A., 4, 5

Kelliher, D., 34  
Khan, A., 43  
Khatir, Z., 43  
Kita, E., 35  
Kmet, S., 31  
Krezel, Z.A., 52  
Kučerová, A., 1

Lai, Y-H., 33  
Lamberti, L., 11  
Laurent, L., 50  
Lazo, J.G.L., 22  
Levi, R., 20  
Lin, C-C., 33  
Lin, J., 16  
Lopes, C.S., 45  
Lou, H-R., 44  
Lou, S-S., 33

Marano, G.C., 6, 49  
McManus, K.J., 29, 52  
Medaglia, A.L., 3  
Meschke, G., 26  
Mészáros, L., 18  
Milanović, G., 13  
Milivojević, N., 13  
Moharrami, H., 27  
Moita, G.F., 10  
Murphy, C., 34

Ninic, J., 26  
Noakes, C.J., 43

Oliveira, L.C., 41  
Osman-Schlegel, N.Y., 52

Pálné Schreiner, J., 21  
Pappalettere, C., 11  
Phiri, M., 7  
Polynkin, A., 43

Rahman, A., 30  
Ranković, V., 13

Sabzi, O., 5  
Saka, M.P., 12  
Sánchez-Silva, M., 3, 46  
Sebaey, T.A., 45  
Serio, D., 49

Shakib, H., 27  
Sheikholeslami, R., 4  
Shimizu, H., 35  
Shrestha, S., 30  
Soulier, B., 50  
Stascheit, J., 26  
Strömberg, N., 39

Taflanidis, A.A., 14, 15  
Talatahari, S., 4  
Tamaki, T., 35  
Tapankov, M., 39  
Thompson, H., 43  
Toropov, V.V., 43

Velasco, M.M.B.R., 22, 25  
Velasco, P.C.G.S., 25  
Von Poser, I., 40

Wakita, Y., 35  
Wu, C-M., 33, 44  
Wu, Z.Q., 32

Xu, Y.J., 37

Yang, N., 32  
Yu, W-D., 33, 44

Zawidzki, M., 9  
Zhang, W.H., 37

# Keyword Index

The numbers in this index are paper numbers.

- $\alpha$ -level optimization, 28
- activation functions, 31
- adaptive neuro-fuzzy inference system, 13
- analytical expression, 43
- analytical solution, 21
- ant colony, 45
- ant colony optimization, 5, 12
- artificial intelligence, 52
- artificial neural networks, 23, 26, 30, 31
- assemblies, 50
- attribute reduction, 16
- Bayesian neural networks, 25
- bi-objective models, 20
- biaxial, 45
- big bang-big crunch, 11
- Bouc-Wen, 48
- building codes, 6
- building guidance, 7
- bus-routing optimization, 51
- catchment area, 40
- catchment attributes, 30
- categorical regression, 52
- cellular automata, 35
- ceramic matrix composites, 37
- Chandler model, 35
- chi-square test, 52
- clustering, 46
- coastal hazard, 14
- cokriging, 50
- complex networks, 46
- computational experiment, 20
- computational models, 31
- constrained optimization, 49
- correlation matrix, 2
- cost optimization, 5
- dam behavior, 13
- dam safety, 13
- damage identification, 16, 32
- data mining, 52, 53
- data processing method, 16
- databases, 52
- deep foundation, 23
- deformation, 34
- design of experiments, 1, 39
- deterioration models, 29
- differential evolution, 47, 48
- discrete approximation, 21
- discrete optimization, 9
- discrete optimum design, 12
- dispersed, 45
- dominance based selection methods, 49
- drift, 27
- engineering applications, 43
- entropy, 51
- evolution strategy, 9
- evolutionary algorithms, 8, 49
- evolutionary computation, 38
- evolutionary polynomial regression, 6
- experimental data, 6
- external memory, 38
- failure constraints, 45
- fall protection technology, 33
- feedforward neural network, 13
- finite difference method, 40
- finite element analysis, 28, 31, 34, 37
- flood estimation, 30

flood frequency, 30  
fuzzy data, 28  
fuzzy inference system, 33  
fuzzy logic, 7  
fuzzy project scheduling, 19  
fuzzy structural analysis, 28  
fuzzy variables, 17

genetic algorithms, 7, 10, 38, 39, 48  
genetic operation tree, 44  
genetic programming, 43  
geometrically nonlinear analysis, 31  
geothermal utilization, 21  
global optimization, 42, 53  
global stability constraints, 18  
granular computing, 46  
gravity retaining wall, 4

hammock activities, 20  
harmony search, 5, 20, 37  
heavy metals, 40  
heuristic algorithms, 20, 42  
heuristic and metaheuristic methods, 21  
heuristic big bang-big crunch algorithm, 4  
high-fidelity design optimisation, 43  
hurricane risk, 14  
hybrid evolutionary algorithm, 10  
hybrid heuristic optimization, 18  
hybrid methods, 19, 20, 21, 41  
hybrid model, 24  
hybrid optimization algorithms, 42  
hydrologic prediction, 24

identification, 48  
identification accuracy, 16  
infrequent explosions, 11  
inverse structural engineering, 34

kernel estimation, 15  
kernel principal component analysis, 32

laminates, 45  
large-span shallow dome, 18  
latin hypercube sampling, 1  
LATIN method, 50  
Lattakia, Syria, 40  
learning techniques, 31  
line search, 11

local search methods, 10  
local stability constraints, 18  
low volume traffic roads, 29

machine learning, 27  
managing projects, 20  
material property, 34  
mathematical structure, 43  
mechanised tunnelling, 26  
metaheuristic optimization, 18  
metaheuristic techniques, 20  
metaheuristics, 19  
metamodel, 39, 43, 50  
microstructure modelling, 37  
model prediction error, 14  
model-free material description, 28  
modular truss system, 9  
Monte Carlo simulation, 2  
monthly inflows, 22  
moving least squares, 14  
multi-layer perceptron, 24, 31  
multi-level optimization, 50  
multi-objective evolutionary algorithms, 3  
multi-objective optimization, 8, 45  
multi-parametric strategy, 50  
multi-variate sampling, 2  
multi-vehicle following model, 35

neural networks, 7, 22, 29  
non-linear characteristics, 32  
non-linear dynamic procedure, 27  
non-linear modelling, 23  
non-linear system, 43  
NSGA-II, 3

optimal design, 47  
optimization, 4, 21, 34, 46  
orthogonality, 1

parametric study, 31  
particle swarm optimization, 5, 32, 36, 37, 42, 47, 48  
patent analysis, 33  
petroleum reservoir, 41  
physical insight, 6  
piles, 23  
pollutant plume, 40  
polynomial, 39  
polynomial regression, 27

Powell method, 42  
prescriptive vs. performance-based norms, 7  
probability distribution, 2  
production optimization, 41  
push-out test, 25

radial displacement, 13  
rail track displacements, 31  
random number generation, 2  
random variables, 17  
real genetic algorithm, 40  
real-time prediction of displacement, 26  
recurrent neural networks, 28  
regression model, 39  
reinforced concrete beam, 6  
reinforced concrete plane frames, 5  
relative information entropy, 15  
reliability analysis, 8  
reliability based optimal design, 36  
reservoir modeling, 21  
resource allocation, 46  
resource-constrained project scheduling, 19, 20  
response surface approximations, 14  
retractable roof structure, 31  
revised counter-propagation network, 16  
risk, 17  
river flows, 24  
robust optimization, 3, 17  
robust scheduling, 19  
root mean square error, 27  
rough set, 16

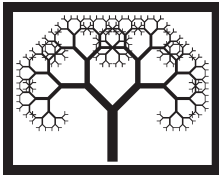
sampling-based sensitivity analysis, 1  
seismic design, 4  
self-organising map, 24  
sensitivity analysis, 15  
setback buildings, 27  
settlement, 23  
simulated annealing, 2  
soft computing, 7  
space-filling, 1  
stability analysis, 35  
static procedures, 27  
stochastic process, 22  
stochastic search techniques, 12  
stochastic simulation, 15  
structural behaviour prediction, 31  
structural optimization, 5, 8, 10, 12  
structural reliability, 17  
stud shear connectors, 25  
support vector machine, 32  
surrogate model, 39  
sustainability, 21  
systems approach, 46

technological strategy, 33  
technology innovation, 44  
test functions, 42  
thermal residual stresses, 37  
time-varying parameters, 36  
topology optimization, 3  
torsional strength, 6  
tracheal cartilage, 34  
transportation, 51  
trends of evolution, 44  
truss structures, 8, 10, 11, 36  
Truss-Z, 9

uncertainties, 17  
ungauged catchment, 30

water distribution network, 47  
weight minimization, 11





**CIVIL-COMP PRESS**  
**Stirlingshire, Scotland**  
**mmxi**

